#### (12) INTERNATIONAL AT PLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau



## I CONTO CINICIDE IN CONTO TIANI CONTO CONTO CONTO IN TORRESTANTO CONTO TORRESTANTO CONTO CONTO CONTO CONTO CONT

### (43) International Publication Date 19 February 2004 (19.02.2004)

**PCT** 

## (10) International Publication Number WO 2004/015027 A1

(51) International Patent Classification<sup>7</sup>: C10B 43/08, B08B 9/093

(21) International Application Number:

PCT/CA2003/000541

(22) International Filing Date: 11 April 2003 (11.04.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2,397,509

12 August 2002 (12.08.2002) CA

(71) Applicant (for all designated States except US): CEDA INTERNATIONAL CORPORATION [CA/CA]; 4200, 150 - 6th Avenue, S.W., Calgary, Alberta T2P 3Y7 (CA).

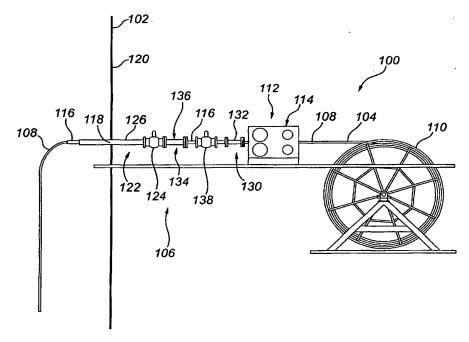
(72) Inventors; and

(75) Inventors/Applicants (for US only): RICHARDS, Dan [CA/CA]; 206 Highland Close, Fort McMurray, Alberta T9H 3T5 (CA). WHITLOCK, David, J. [CA/CA]; 34 Markham Crescent, Sherwood Park, Alberta T8A 3T3 (CA). FITZMAURICE, Brian [CA/CA]; 98 Scothaven, 55246, R.R. 232, Sherwood Park, Alberta T8B 1C1 (CA). BRONSON, Mike [CA/CA]; 15616 - 54 Street, Edmonton, Alberta T5Y 2T3 (CA).

- (74) Agents: GARWASIUK, Helen et al., 1501 10060 Jasper Avenue, Scotia Place, Tower Two, Edmonton, Alberta T5J 3R8 (CA).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR CLEANING A COKER OR OTHER VESSEL



(57) Abstract: An apparatus and method for cleaning a vessel are disclosed. The vessel may include a coker for the extraction of crude oil, for example. The apparatus may include an elongated flexible conduit insertable through an elongated rigid conduit into the vessel, for conducting pressurized liquid into the vessel to clean the vessel. The apparatus preferably includes a sealing device for sealing a gap between the flexible conduit and the rigid conduit to prevent fluid from travelling through the gap.



## Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Internation Application No

-	INTERNATIONAL SEARCH RE	PORT	PCT/C	/00541
A. CLASSI IPC 7	FICATION OF SUBJECT MATTER C10B43/08 B08B9/093	<u>'</u>		
According to	o International Patent Classification (IPC) or to both national classific	cation and IPC		
B. FIELDS	SEARCHED			
Minimum do IPC 7	cumentation searched (classification system followed by classificate $C10B-B08B-C10G$	ion symbols)		
Documental	ion searched other than minimum documentation to the extent that	such documents are inclu	uded in the fields s	earched
	ala base consulted during the international search (name of data baternal, WPI Data, COMPENDEX	ase and, where practical,	search terms used	1)
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT			
Category °	Citation of document, with indication, where appropriate, of the re	levant passages		Relevant to claim No.
χ	US 2002/046833 A1 (PERIO DUDLEY 025 April 2002 (2002-04-25) paragraph '0004! - paragraph '00 figure 1A			1-27
X	US 4 828 651 A (DAVIDSON MICHEL 9 May 1989 (1989-05-09) column 2, line 13 -column 3, line figure 1			1-28,34, 35
Α	US 3 920 537 A (WALKER JOHN H) 18 November 1975 (1975-11-18) the whole document	-/ <b></b>		1-42
<u> </u>	er documents are listed in the continuation of box C.	χ Patent family r	nembers are listed	in annex.
'A' docume consid 'E' earlier of filing di 'L' docume which i cltation 'O' docume other n 'P' docume later th	nt which may throw doubts on priority claim(s) or sciled to establish the publication date of another or or other special reason (as specified) and referring to an oral disclosure, use, exhibition or neans of the international filing date but an the priority date claimed	'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  '&' document member of the same patent family		
	actual completion of the international search	Date of mailing of the		arch report
6	June 2003	17/06/20	UU3	
Name and m	nalling address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Zuundee	g, B	·
	(.= / =	1		

## INTERNATIONAL SEARCH REPORT

PCT/C Application No

PCI/C /00541				
	ation) DOCUMENTS CONSIDERS OBE RELEVANT		15	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
A	MALLORY DONALD G ET AL: "Role of the vapour phase in fluid coker cyclone fouling: Part 1. Coke yields" CANADIAN JOURNAL OF CHEMICAL ENGINEERING, vol. 78, no. 2, April 2000 (2000-04), pages 330-336, XP008018068 OTTAWA, CAN figure 1			

## INTERNATIONAL SEARCH REPORT

Inimitation on patent family members

Internation Application No PCT/0 8/00541	-

					07 00341
Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 2002046833	A1	25-04-2002	US	6347664 B1	19-02-2002
US 4828651	Α	09-05-1989	FR	2622596 A1	05-05-1989
US 3920537	A	18-11-1975	AU BR CA DE DK GB JP JP NL NO SE SE	8159675 A 7503511 A 1047426 A1 2524570 A1 250875 A ,B, 1479860 A 1174091 C 51033769 A 57038635 B 7506698 A ,C 751904 A ,B, 396766 B 7506367 A	16-12-1976 25-05-1976 30-01-1979 18-12-1975 06-12-1975 13-07-1977 28-10-1983 23-03-1976 17-08-1982 09-12-1975 08-12-1975 03-10-1977 08-12-1975